



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

SWA25A-6
Job Sheet 172856



Part No: SWA25A-6 **25060 LBS AP** Job Qty: 1 ea

Part Name: Electric Swivel ~~15000~~ lb Safe Work Load (6,818 kg)



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/22/18

Job Tracking No:

Due Date: 3/2/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: SWA25A REV1 IPP REV:A 18.02.20 NEW ISSUE DD VERF:DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		3/1/18	0.00	0.00	Start Up Small Fab-2		SB
110	Small Fab	1 pcs		3/2/18	0.00	2.00	Small Fab-6		APB
120	QC	1 pcs		3/2/18	0.00	0.00	QC5		D 183-16
130	Packaging	1 pcs		3/2/18	0.00	0.00	Packaging3		Smr P1002
140	QC21-FG	1 Ea		3/2/18	0.00	0.00	QC21		MAR 2 0 2018 m 18/03/20

Part Op 110 - Assemble as per DWG. Sheet 1 ***All assembly to be done in accordance with SWA25A swivel manual*** Engrave Descriptions: T/N And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG.
130 - Bag and tag

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
✓ 188-FPSS-1032-1/2	Set Screw	1 Ea (1 ea)	90-Start up Operation	5037670
✓ 188-FSCS-1032-5/8	Wire Clamp Screw	4 Ea (4 ea)	110-Small Fab	5031242 5027240
✓ 600.1319	Up Decal	1 Ea (1 ea)	110-Small Fab	5036704 5037066
✓ EL-PLUG-F	3-Prong Female Spade Plug	1 Ea (1 ea)	110-Small Fab	5031223
✓ EL-PLUG-M	3-Prong Male Spade Plug	1 Ea (1 ea)	110-Small Fab	5031224
✓ EL616-ARTIC	6 Wire	1 (1 ea)	110-Small Fab	5047770
✓ SWA10A-1100	Upper DU Bearing	1 Ea (1 ea)	110-Small Fab	5037480
✓ SWA10A-1200	Lower DU Bearing	1 Ea (1 ea)	110-Small Fab	50451196 5036190
✓ SWA10A-1300	Roller Thrust Bearing	1 Ea (1 ea)	110-Small Fab	5036727 5036729
✓ SWA10A-1400	Circlip	1 Ea (1 ea)	110-Small Fab	5036191
✓ SWA10A-1800	Cover	1 Ea (1 ea)	110-Small Fab	5031915
✓ SWA10A-300	Bearing Housing	1 Ea (1 ea)	110-Small Fab	5034293
✓ SWA10A-400	Thrust Washer	1 Ea (1 ea)	110-Small Fab	5049928
✓ SWA10A-500	Semi-Rings	1 Ea (1 ea)	110-Small Fab	5029393
✓ SWA10A-600	Collar	1 Ea (1 ea)	110-Small Fab	5025519 5034519
✓ SWA10A-700A	Wire Clamp	2 (2 ea)	110-Small Fab	5051400
✓ SWA25A-110	Lower End	1 Ea (1 ea)	110-Small Fab	5047070
✓ SWA25A-210	Upper End Swivel	1 Ea (1 ea)	110-Small Fab	5051373
✓ SWA6A-1900 65525 K16	Female Spade Terminal - 1/4"	8 Ea (8 ea)	110-Small Fab	5031234
✓ SWA6A-2000	1/8" Female Spade Connector	4 Ea (4 ea)	110-Small Fab	5027244
✓ SWA6A-800C	Connector Bushing	1 Ea (1 ea)	110-Small Fab	5029421
✓ SWA6A-900D	Rotary Contact	1 (1 ea)	110-Small Fab	5049654

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	188-FPSS-1032-1/2	1	100	0
110-Small Fab	188-FSCS-1032-5/8	4	184	0
	600.1319	1	250	0
	EL-PLUG-F	1	38	0
	EL-PLUG-M	1	35	0
	EL616-ARTIC	1	0	0
	SWA10A-1100	1	6	0
	SWA10A-1200	1	10	0
	SWA10A-1300	1	10	0
	SWA10A-1400	1	10	0
	SWA10A-1800	1	14	0
	SWA10A-300	1	14	0
	SWA10A-400	1	0	0
	SWA10A-500	1	0	0
	SWA10A-600	1	16	0
	SWA10A-700A	2	0	0
	SWA25A-110	1	0	0
	SWA25A-210	1	0	0
	SWA6A-1900	8	88	0
	SWA6A-2000	4	100	0
	SWA6A-800C	1	0	0
	SWA6A-900D	1	0	0

Part Specifications

Specifications could not be found.

Plex 2/22/18 8:53 AM Dart.lajeunesse.marie

DART
AEROSPACE

Container No: S045759

Part: SWA25A-6

Job No: 172856

Serial No/Batch: S045759

Revision: SWA25A

Inspector:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 02/27/18

DQA: _____ Date: _____



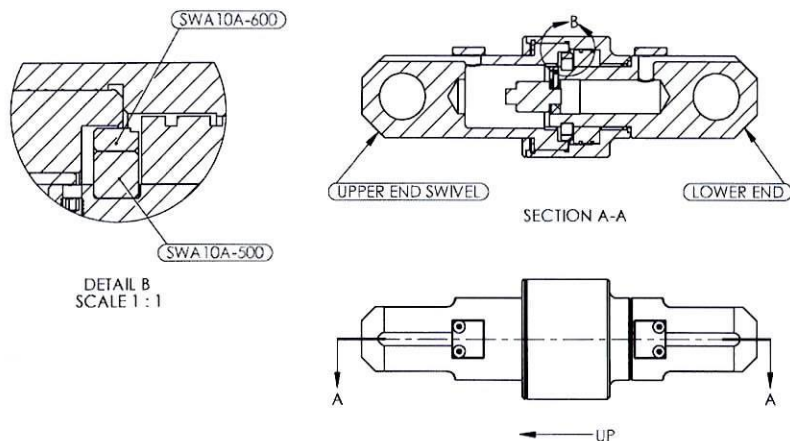
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

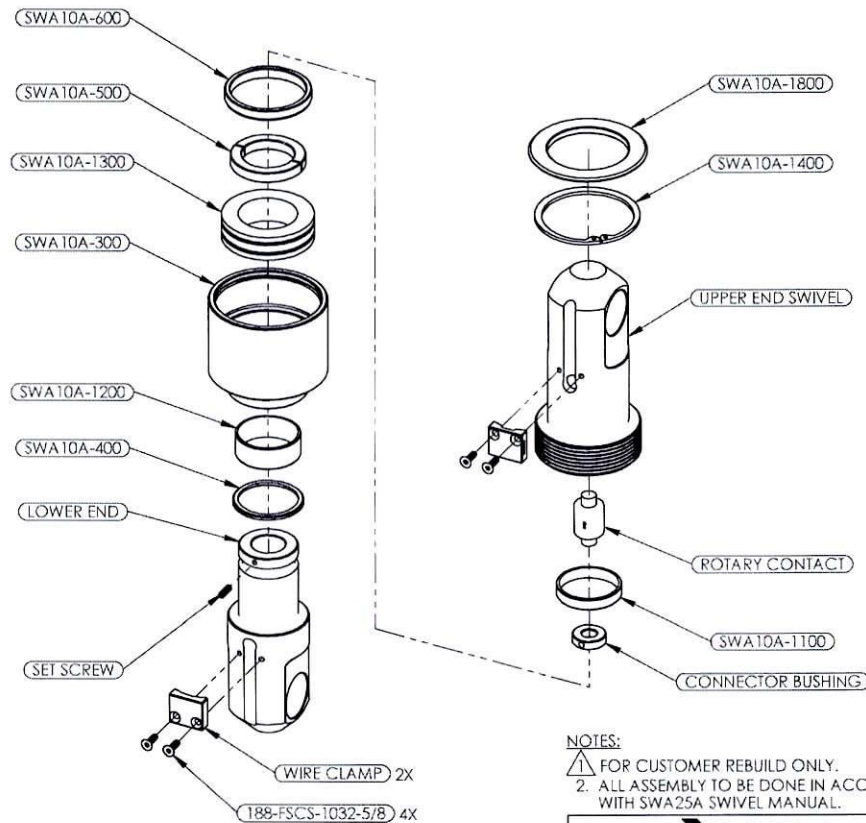
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____	

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QTY	QTY	QTY	QTY	QTY	B/O	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS
1	1	1	1	1	B/O	SWA25A-100	LOWER END		
1	1	1	1	1	B/O	SWA25A-110	LOWER END		
1	1	1	1	1	B/O	SWA25A-200	UPPER END SWIVEL		
1	1	1	1	1	B/O	SWA25A-210	UPPER END SWIVEL		
1	1	1	1	1	B/O	SWA10A-300	BEARING HOUSING		
1	1	1	1	1	B/O	SWA10A-400	THRUST WASHER		
1	1	1	1	1	B/O	SWA10A-500	SEMI-RINGS		
1	1	1	1	1	B/O	SWA10A-600	COLLAR		
2	2	2	2	2	B/O	SWA10A-700	WIRE CLAMP		
1	1	1	1	1	B/O	SWA10A-700A	WIRE CLAMP		
1	1	1	1	1	B/O	SWA6A-800A	CONNECTOR BUSHING		
1	1	1	1	1	B/O	SWA6A-800B	CONNECTOR BUSHING		
1	1	1	1	1	B/O	SWA6A-800C	CONNECTOR BUSHING		
1	1	1	1	1	B/O	SWA6A-900A	ROTARY CONTACT	MERCOTAC #230	
1	1	1	1	1	B/O	SWA6A-900B	ROTARY CONTACT	MERCOTAC #330	
1	1	1	1	1	B/O	SWA6A-900C	ROTARY CONTACT	MERCOTAC #430	
1	1	1	1	1	B/O	SWA6A-900D	ROTARY CONTACT	MERCOTAC #530	
1	1	1	1	1	B/O	SWA6A-900E	ROTARY CONTACT	MERCOTAC #630	
1	1	1	1	1	B/O	SWA10A-1100	UPPER DU BEARING		
1	1	1	1	1	B/O	SWA10A-1200	LOWER DU BEARING	(KAMAN M80200U)	
1	1	1	1	1	B/O	SWA10A-1300	ROLLER THRUST BEARING	(KAMAN R1210N)	
1	1	1	1	1	B/O	SWA10A-1400	ORICUP	(KAMAN N500C 350 5PF)	
1	1	1	1	1	B/O	SWA10A-1800	COVER		
4	4	4	4	4	B/O	SWA6A-1900	1/4" FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #69325+14)	
1	1	1	1	1	B/O	SWA6A-2000	1/8" FEMALE SPADE CONNECTOR	(MCMMASTER-CARR #69325+14)	
1	1	1	1	1	B/O	EL-PLUG-F	FEMALE PLUG	PE High Density (MCMMASTER-CARR #7216K6)	
1	1	1	1	1	B/O	EL-PLUG-M	MALE PLUG	PE High Density (MCMMASTER-CARR #7216K5)	
4	4	4	4	4	B/O	188-FSCS-1032-5/8	FLAT SOCKET CAP SCREW	S.S. 10-32 x 5/8 (MCMMASTER-CARR #92210A303)	
1	1	1	1	1	B/O	188-FPSS-1032-1/8	SET SCREW	S.S. 10-32 x 3/8 (MCMMASTER-CARR #94355A335)	
1	1	1	1	1	B/O	188-FPSS-1032-1/2	SET SCREW	S.S. 10-32 x 1/2 (MCMMASTER-CARR #94355A337)	
1	1	1	1	1	B/O	188-FPSS-1032-5/8	SET SCREW	S.S. 10-32 x 5/8 (MCMMASTER-CARR #92211A432)	
1	1	1	1	1	B/O	EL314-SUTOW	3 WIRE	6 FT. (TEKCAN: REL 314S1 TOW 3/14)	
1	1	1	1	1	B/O	EL414-ARTIC	4 WIRE	6 FT. (TRUCK & AUTO SUPPLY: REL 414-ARTIC 4/14)	
1	1	1	1	1	B/O	EL516-ARTIC	6 WIRE	6 FT. (TRUCK & AUTO SUPPLY: REL 516-ARTIC)	
1	1	1	1	1	B/O	EL816-ARTIC	8 WIRE	6 FT. (TRUCK & AUTO SUPPLY: REL 816-ARTIC)	
1	1	1	1	1	B/O	600.1319	UP DECAL		

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
A		REPLACED ID DECAL 600.1311 WITH LASER ETCH	11/16/2012	JAG	
1	15-0205	UPDATED TO NEW DRAFTING STANDARDS. SWA6A-1900 CHD QTY: 4 ASSY WAS 8 B & 6 ASSY WAS 12 B & 4 ASSY WAS 15 B. SWA6A-2000 ADDED TO BOM. ASSY 4, 4, 3 QTY 4. 188-FSCS-1032-1/2 DELETED. REPLACED WITH 188-FSCS-1032-5/8. 188-FPSS-1032-1/2 ADDED TO BOM. ASSY 8 QTY 1. 188-FPSS-1032-1/2 CHD QTY: 8 ASSY WAS 1 B & 6 ASSY WAS 12 B. EL314-SUTOW CHD QTY: 2 & 3 ASSY WAS 5 B & 1. ADDED 8 FT TO B/O. EL414-ARTIC CHD QTY: 4 ASSY WAS 6 B & 1. ADDED 8 FT TO B/O. EL414-ARTIC CHD QTY: 8 ASSY WAS 6 B & 1. ADDED 8 FT TO B/O. ADDED REBUILD NOTE. ADDED ENGRAVING NOTES & DETAILS.	8/11/2015	DPD	JAG



NOTES:
1. FOR CUSTOMER REBUILD ONLY.
2. ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA25A SWIVEL MANUAL.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

		TITLE	
		SWA25A SWIVEL	
DWG NO.	SWA25A	REV	1
MATERIAL		DRAWN BY:	GILBERT
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.		APPROVED:	<i>[Signature]</i>
FRACTIONS ± 1/8		TEST:	
ANGLES ± 5°		FINISH:	
SPEC		USED ON MODEL	
1. BREAK ALL SHARP EDGES .015 x 45°			
2. DIMENSIONAL LIMITS APPLY AFTER PLATING			
SCALE	1:4	DATE	11/14/2012
		SHEET 1 OF 2	

NO. 172 836 HCS
1802-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

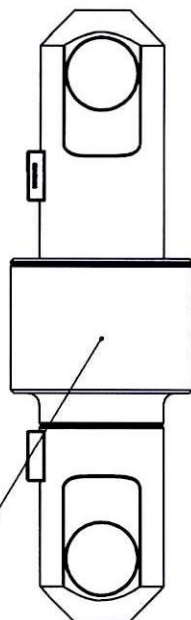
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐					

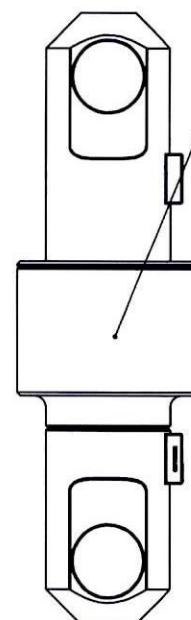
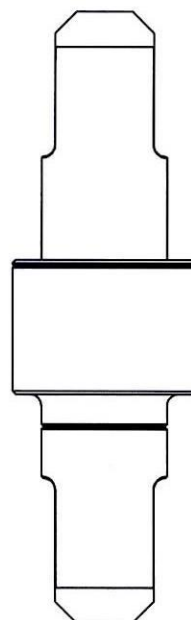
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

ENGRAVE P/N, S/N, SWL



LASER ENGRAVE DART LOGO



DART AEROSPACE	
TITLE SWA25A SWIVEL	
DWG NO. SWA25A	REV 1
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 .XX ± .01 .X ± .1	DRAWN BY: GILBERT APPROVED: <i>D Weil</i> HEAT TREAT FINISH SPEC USED ON MODEL
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:4	DATE 11/14/2012
SHEET 2 OF 2	

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order SWA25A-6

Customer _____

Number of Wires 5045759 ↗Date 18/03/16Serial Number 6

Number of Cycles	Load (Lbs.)	Action	Pass/Fail
1	25,000	Check for Conductivity against all wires.	- Pass
1	25,000	Check all wires for grounding against swivel body.	- Pass
1	12,500	Check for Conductivity against all wires.	- Pass
1	12,500	Check all wires for grounding against swivel body.	- Pass
1	6,250	Check for Conductivity against all wires.	- Pass
1	6,250	Check all wires for grounding against swivel body.	- Pass
1	0	Check for Conductivity against all wires.	- Pass
1	0	Check all wires for grounding against swivel body.	- Pass

Test Conducted By:

Emilie Bouchon

Technician

Signature:



QC 5 Small FAB / QA